

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES**

In Re Application of:

Clive Alan Brown

Serial No.: 10/532,035

Filed: February 2, 2006

For: **Test Device for Internal Combustion Engine**

Confirmation No.: 6767

Group Art Unit: 2855

Examiner: Cygan, Michael T.

Docket No. 20860/09001-RCE

APPEAL BRIEF UNDER 37 C.F.R. §41.37

Mail Stop Appeal Brief - Patents
Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Virginia 22313-1450
Sir:

This is an appeal from the decision of Examiner Michael T. Cygan, Group Art Unit 2855, of July 2, 2008, objecting to claims 6 and 17 and rejecting claims 1 - 4, 7, 9 - 16 and 18 - 20 in the present application and making the rejection FINAL.

I. REAL PARTY IN INTEREST

The real party in interest is Clive Alan Brown, a citizen of Great Britain, residing in Hollyside, Windmill Gardens, Staverton, Northants, NN11 6DD Great Britain.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals, interferences or judicial proceedings known to Applicant, Applicant's legal representative, or any assignee that will directly affect, be directly affected by or have a bearing on the Board's decision in the present appeal. The "Related Proceedings Appendix-III" indicates that there are no related appeals or interferences.

III. STATUS OF THE CLAIMS

Claims 1 – 4, 6, 7, and 9 – 20 are pending in the present application. Claims 6 and 17 were objected to as being dependent on a rejected base claim, and claims 1 – 4, 7, 9 – 16 and 18 – 20 are rejected by the FINAL Office Action, which are all the subject of this appeal.

IV. STATUS OF AMENDMENTS

An amendment after final filed on June 4, 2008 was not entered as indicated in the Advisory Action mailed July 2, 2008. A copy of the currently pending claims is attached hereto as Appendix-I.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Embodiments of the claimed subject matter are illustrated in FIGs. 1 and 2 and are discussed in the specification at least at paragraphs [0001] through [0037].

Briefly, the present invention is directed to a device for testing the exhaust emissions of an internal combustion engine. The testing device has a base station, a wireless gas sensor and a wireless data input terminal, where each include a wireless real-time data transmitter and receiver.¹ The gas sensor and the display device are detachable from the base station and each other for independent use.² Each includes power packs to provide the necessary power when they are remote from the base station.³

The present invention seeks to provide a testing device that allows the user to be remote from the gas sensor and base station during testing,⁴ which reduces user exposure to hazardous fumes since the user can sit in the car with the door closed during testing while entering data

¹ U.S. Published Patent App. 20060150713, para. [0010].

² *Id.* at para. [0013].

³ *Id.* at para. [0019].

⁴ *Id.* at para. [0013].

on the remote display device.⁵ That is, during testing, there is no physical connection between the base station, the wireless display device or the wireless gas exhaust sensor so the car door can be completely closed with the windows up to prevent continued exposure to the vehicle emissions. In prior art systems, testing takes place in a workshop because the equipment is mounted on a wall in the shop and the gas sensor and data entry terminal are hard wired. Fumes from the vehicle being tested can quickly fill up the workshop, which is dangerous to the tester and other workers in the shop. The present invention allows the vehicle being tested to be located outside of the shop since the wireless gas sensor and wireless hand portable display device can be remote from the base station and each other while transmitting data to the base station located in the work shop. Moreover, because the wireless hand portable display device and the wireless gas sensor operate with no hardwires between these devices or physical connections, the user can be shielded from the fumes since the user can sit within the car with the door closed and windows up during testing.

Claims 1 and 13 are independent claims and seek to capture these unique qualities of the present invention. In this regard, independent claim 1 calls for a device⁶ for testing the exhaust emissions of an internal combustion engine comprising a base station⁷ having respective docking ports⁸ for a portable exhaust gas sensor⁹ adapted for positioning at the exhaust gas outlet,¹⁰ and for an in-vehicle hand portable display device¹¹ having a data input terminal comprising a keypad,¹² wherein said base station, gas sensor and display device each

⁵ *Id.* at para. [0015].

⁶ U.S. Published Patent App. 20060150713, Figure 1; Para. [0028], Ref. Num. 10.

⁷ *Id.*, Ref. Num. 14.

⁸ *Id.* at Para. [0019] – [0021].

⁹ *Id.* at Para. [0028]; Para. [0032]; Ref. Num. 16;

¹⁰ *Id.* at Figure 2; Para. [0032]

¹¹ *Id.* at Figures 1 and 2; Para. [0028] – [0029]; Ref. Num. 18.

¹² *Id.* at Para.[0028] not shown in the Figures.

include a wireless real-time data transmitter¹³ and receiver¹⁴ whereby data concerning the exhaust gases can be transmitted and received therebetween during¹⁵ an exhaust emissions test, and wherein said gas sensor and display device are detachable¹⁶ from said base station for independent use¹⁷ and each include power packs¹⁸ to provide the necessary power when they are remote from the base station.¹⁹

Independent claim 13 calls for a device²⁰ for testing the exhaust emissions of an internal combustion engine comprising a base station,²¹ a remote exhaust gas sensor,²² and a remote hand portable display device having a data input terminal comprising a keypad,²³ each being detachable from the base station for independent use,²⁴ wherein said base station, sensor and display device further include at least one of a radio transmitter and receiver whereby data can be transmitted and received therebetween.²⁵

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The FINAL Office Action rejects claims 1 - 4, 7, 9, 13 - 16, and 18 - 20 under 35 U.S.C. §102(b) as being anticipated by *McLeod, et al.* ("*McLeod*," U.S. Publication No. 2002/0004694). The FINAL Office Action also rejects claims 10 and 12 under 35 U.S.C. §103(a) as being unpatentable over *McLeod* in view of *Vojtisek-Lom* ("*Vojtisek-Lom*," U.S. Patent No. 6,435,019). The FINAL Office Action rejects claim 11 under 35 U.S.C. §103(a)

¹³ *Id.* at Para [0031] not shown in the Figures.

¹⁴ *Id.*

¹⁵ *Id.* at Para. [0034] (data is transmitted in real time).

¹⁶ *Id.* at Figure 2; Para. [0032] - [0033].

¹⁷ *Id.* at Para. [0013].

¹⁸ *Id.* at Para. [0029] not shown in the Figures.

¹⁹ *Id.*

²⁰ *Id.* at Figure 1; Para. [0028], Ref. Num. 10.

²¹ *Id.* at Ref. Num. 14.

²² *Id.* at Para. [0028]; Para. [0032]; Ref. Num. 16;

²³ *Id.* at Figures 1 and 2; Para. [0028] - [0029]; Ref. Num. 18, keyboard not shown in the Figures.

²⁴ *Id.* at Figure 2; Para. [0013] and [0032] - [0033].

²⁵ *Id.* at Para. [0034] (data is transmitted in real time).

as being unpatentable over *McLeod* in view of *Doyle* ("*Doyle*," U.S. Pub. No. 2003/0159044). Finally, claims 6 and 17 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

VII. ARGUMENT

A. The first ground of rejection to be reviewed on appeal is whether independent claims 1 and 13 are unpatentable under 35 U.S.C. §102(b) by U.S. Publication No. 2002/0004694 to *McLeod, et al.*

A claim is anticipated only if each and every element as set forth in the claim is described in a single prior art reference. MPEP §2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). *McLeod, et al.* fails to teach or disclose each and every limitation as set forth in the claim.

Independent claim 1 calls for, among other things,

a base station, a gas sensor, and display device each including a wireless real-time data transmitter and receiver . . . and wherein the gas sensor and display device are detachable from the base station for independent use and each include power packs to provide the necessary power when they are remote from the base station.

Independent claim 13 calls for, among other things,

a base station, a gas sensor, and a remote hand portable display device each being detachable from the base station for independent use, and wherein the base station, sensor and display device further include at least one of a radio transmitter and receiver.

The examiner has failed to make a prima facie rejection of the independent claims because the reference cited does not disclose the limitation of a gas sensor and remote hand portable display device each being detachable from the base station for independent use. In the Final Office Action dated March 17, 2008, the Examiner indicated that the '694 application at paragraphs 160, 162, 164 and 174 disclosed that the gas sensor and hand held portable display are detachable from the base station for independent use as called for in the independent

claims. As discussed below, *McLeod, et al.* fails to disclose a wireless gas sensor and a wireless remote hand portable display device that are each detachable from the base station for independent use from each other.

Paragraph [160] is reproduced in its entirety below:

The data processing device may also perform other functions related to automotive performance evaluation but not associated with the modular vehicle diagnostic system. For example, the data processing device may also interact with other equipment in an automotive repair shop and/or function as a central hub of vehicle diagnosis, sales and inventory.

There is nothing in paragraph [160] that indicates that a wireless gas sensor and a wireless remote hand portable display device are each detachable from the base station for independent use from each other.

Paragraph [162] is reproduced in its entirety below:

In furtherance of this aspect of the present invention, a docking station 60 is provided through which a communications link between a data processing device and selected devices within the modular vehicle diagnostic system may be established. In the presently-preferred embodiment, a docking station is provided for converting data and control information between communication formats implemented by the data processing device and communication formats, discussed below, of other vehicle diagnostic system devices.

Once again, there is nothing in paragraph [162] that indicates that a wireless gas sensor and a wireless remote hand portable display device are each detachable from the base station for independent use from each other.

Paragraph [164] is reproduced in its entirety below:

Docking station 60 may include several ports for the interconnection of various modular devices, including data processor 62, and may include memory and processing devices for converting between different communication formats, such as bit processing formats.

Again, there is nothing in paragraph [164] that indicates that a wireless gas sensor and a wireless remote hand portable display device are each detachable from the base station for independent use from each other. The only information gleaned from the Examiner's citing of this paragraph is that the Examiner in interpreting docking station 60 as applicant's claimed base station, because applicant's base station requires docking ports.

Finally, paragraph [174] is reproduced in its entirety below:

In the preferred embodiment of the present invention, a data processor 62 may be serially linked directly to the user interface unit 48 via a serial data cable 74. The serial link allows the transfer of selected diagnostic data, stored as files within the user interface unit 48, from the user interface unit to the data processor. In the present embodiment, data is transferred in accordance with the modular vehicle diagnostic system serial communications protocol, discussed below. It is preferred that the data processor 62 support the diagnostic functions provided by the other modules, so that diagnostic data may be similarly presented on the user interface unit and the data processor 62 displays.

As with the previous paragraphs, while paragraph [174] indicates that a data processor 62 supports diagnostic functions provided by other modules so that diagnostic data may be similarly presented on the user interface unit and the data processor 62 displays, once again there is no disclosure that a wireless gas sensor and a wireless remote hand portable display device are each detachable from the base station for independent use from each other.

Additionally, there is no disclosure that the gas sensor and the wireless remote hand portable display device each have their own battery. The examiner points to paragraph [158] for this teaching. Paragraph [158] is presented in its entirety below:

Gas analysis module 58 may also provide power to other modular vehicle diagnostic system devices. In the presently-preferred embodiment, the gas analysis module receives power from the vehicle battery. Power for the other devices is provided at power terminal 510.

There is neither a teaching nor disclosure in paragraph [158] for the wireless gas sensor or the wireless remote hand portable display device to each have their own power packs to provide the necessary power when they are remote from the base station, as required by independent claim 1. Instead, this paragraph merely says that the gas sensor receives power from the vehicle battery. Such power source is no different than plugging the gas sensor into a wall outlet since it does not make the gas sensor self contained for portable use. That is, there is no disclosure that either the wireless remote hand portable display or wireless gas sensor contain their own power packs, but instead teaches the use of an external power source to power the gas sensor.

Applicant acknowledges that *McLeod* does discuss wireless communication channels. Referring to paragraph [0175] *McLeod* specifically states that

an interconnection, for purposes of the present invention, includes establishing at least one communication channel between a selected device and at least one other device *within* the modular vehicle diagnostic system. A communication channel may require a solid medium, such as a conductive metal. Data may also be communicated between devices by other modes such as through radio waves or electromagnetic radiation. (Emphasis added).

Reference to wireless communication channels is directed to communications between modules that are physically connected to each other. Thus, although physically connected in the same modular interface unit 48, the individual modules may be capable of exchanging data through a wireless connection.

There is, however, no disclosure that the gas sensor and portable hand display may be detachable from the base station or modular interface unit 48 so that each can be used independently of the other, and be wirelessly connected to the base station. In particular, there is no disclosure to place the gas sensor apart from the display device and the base station without a wired connection or elongated tubing between the sensor and the gas analysis module in the modular interface unit 48. Instead, the gas sensor module and the display are both physically part of the modular interface unit during use. As such, a long hose must connect the interface unit gas analyzer module and the sensor probe that is placed in the vehicle tail pipe. Such a connection prevents the user from closing themselves off from the exhaust fumes. Additionally, the very use of an elongated tube prevents the gas sensor from being used independent of the display device since they are physically connected at all time.

Finally, Figure 29 shows that the interface module has various power cords such as AC power cord 704 to the user interface unit 48. In the claimed invention, there is no connection between the hand portable display device, the gas sensor and the base station since each can wirelessly communicate with each other and be used independent of the other. Moreover, since each has its own independent power pack, there is no need to plug the unit into an AC wall outlet, to connect these wireless devices to the vehicle battery for power or any other external power source apart from the devices themselves.

B. The second ground of rejection to be reviewed on appeal is whether claims 10 and 12 are unpatentable under 35 U.S.C. §103(a) by U.S. Publication No. 2002/0004694 to *McLeod, et al.* in view of U.S. Patent No. 6,435,019 to *Vojtisek-*

Lom, and whether claim 11 is unpatentable under 35 U.S.C. §103(a) by U.S. Publication No. 2002/0004694 to *McLeod, et al.* in view of U.S. Published Patent No. 2003/0159044 to *Doyle*.

Dependent claims 2 – 4, 6 – 7, 9 – 12 and 14 – 20 directly or indirectly depend from independent claims 1 and 13. These dependent claims recite further limitations and are allowable in their respective combinations. Favorable action and withdrawal of the present rejections and objections is, therefore, respectfully requested since these claims are dependent on allowable independent claims 1 and 13.

CONCLUSION

Based on the Examiner's above arguments as set forth in the Final Office Action dated March 17, 2008, the Examiner has failed to establish a prima facie rejection under 35 USC 102(b) since disclosure of at least one element in the independent claims is missing. Applicant requests that the Board overturn the pending rejections, and that the claims be allowed in their current form.

In addition to the claims shown in the claims Appendix I, Appendix II includes proposed amendments to the independent claims, which Applicant believes places the claims in better form for consideration for Appeal. Appendix III attached hereto indicates that there are no related proceedings.

Respectfully submitted,

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CLAIMS – APPENDIX I

1. (Previously Presented) A device for testing the exhaust emissions of an internal combustion engine comprising a base station having respective docking ports for a portable exhaust gas sensor adapted for positioning at the exhaust gas outlet, and for an in-vehicle hand portable display device having a data input terminal comprising a keypad, wherein said base station, gas sensor and display device each include a wireless real-time data transmitter and receiver whereby data concerning the exhaust gases can be transmitted and received therebetween during an exhaust emissions test, and

wherein said gas sensor and display device are detachable from said base station for independent use and each include power packs to provide the necessary power when they are remote from the base station.

2. (Previously Presented) A device according to claim 1, wherein said wireless real-time data transmitter and receiver uses radio signals so that data can be transmitted and received therebetween.

3. (Previously Presented) A device according to claim 1, wherein the gas sensor includes a gas analyser.

4. (Previously Presented) A device according to claim 1, wherein the base station includes a memory and printer.

5. (Cancelled).

6. (Previously Presented) A device according to claim 1, wherein said docking port includes a heater whereby said sensor can be maintained at a desired operating temperature.

7. (Previously Presented) A device according to claim 1, wherein said docking port is adapted to transfer data between the base station and the gas sensor.

8. (Cancelled).
9. (Previously Presented) A device according to claim 1, wherein said docking port orientates the display device for use on the base station.
10. (Previously Presented) A device according to claim 1, and further including an engine oil temperature probe having at least one of a wireless real-time data transmitter and receiver for communicating with the display device.
11. (Previously Presented) A device according to claim 1, wherein the base station includes a smart card access device for enabling a test routine.
12. (Previously Presented) A device according to claim 1, and further including an engine speed sensor having at least one of a wireless real-time data transmitter and receiver for communicating with the display device.
13. (Previously Presented) A device for testing the exhaust emissions of an internal combustion engine comprising: a base station, a remote exhaust gas sensor, and a remote hand portable display device having a data input terminal comprising a keypad, each being detachable from the base station for independent use, wherein said base station, sensor and display device further include at least one of a radio transmitter and receiver whereby data can be transmitted and received therebetween.
14. (Previously Presented) A device according to claim 13, wherein the gas sensor includes a gas analyser.
15. (Previously Presented) A device according to claim 13, wherein the base station includes a memory and printer.
16. (Previously Presented) A device according to claim 13, wherein a docking port is provided on the base station for said gas sensor.

17. (Previously Presented) A device according to claim 16, wherein said docking port includes a heater whereby said sensor can be maintained at a desired operating temperature.
18. (Previously Presented) A device according to claim 16, wherein said docking port is adapted to transfer data between the base station and the gas sensor.
19. (Previously Presented) A device according to claim 13, and further including a docking port for the display device.
20. (Previously Presented) A device according to claim 19, wherein said docking port orientates the display device for use on the base station.

EVIDENCE – APPENDIX II

Proposed Amendments to Independent Claims 1 and 3

In accordance with MPEP 41.33 and 41.37 and 37 CFR 1.116(b)(2), Applicant requests that the following claim amendments be entered, because it is Applicant's belief that these amendments place the claims in better form for consideration on Appeal. These claim amendments were submitted in the Response to Final Office Action, dated March 17, 2008, but not entered by the Examiner. Should the Board deem these amendments to be improper, it is Applicant's belief that the claims in their current form (Appendix I) are allowable.

1. (Currently Amended) A device for testing the exhaust emissions of an internal combustion engine comprising a base station having respective docking ports for a portable exhaust gas sensor adapted for positioning at the exhaust gas outlet, and for an in-vehicle hand portable display device having a data input terminal comprising a keypad, wherein said base station, gas sensor and display device each include a wireless real-time data transmitter and receiver whereby data concerning the exhaust gases can be transmitted and received therebetween during an exhaust emissions test, and

wherein said gas sensor and display device are detachable from said base station for mutually independent use and each include power packs to provide the necessary power when they are remote from the base station.

13. (Currently Amended) A device for testing the exhaust emissions of an internal combustion engine comprising: a base station, a remote exhaust gas sensor, and a remote hand portable display device having a data input terminal comprising a keypad, each being detachable from the base station for mutually independent use, wherein said base station, sensor and display device further include at least one of a radio transmitter and receiver

whereby data can be transmitted and received therebetween.

RELATED PROCEEDINGS – APPENDIX III

(None)